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ABSTRACT

Supporting performance objective 78 of the V-TECS (Vocational-Technical Education Consortium of States) Secretarial Catalog, both a set of student materials and an instructor's manual on mastering the offset master are included in this packet. (The packet is the eleventh in a set of fifteen on typewriting--CE 016 920-934.) The student materials include a pretest and a posttest, three learning activities, two check-out activities, an instructor's evaluation guide for each check-out activity, quest (additional and optional) activities, and brief appendixes on preserving the paper master, cleaning the offset printer, using an offset platemaker, and preparing paper masters on a photocopier. The instructor's manual includes a program description, lists of entering behavior, terminal objectives, and required equipment and materials; procedures for the instructor for both group and individual instruction; an answer sheet for the posttest; follow-up activities; references; and a narrative for a filmstrip. The materials are designed for self-paced individual instruction and may be adapted for use with large groups. (A separate booklet--CE 016 911--lists contents for the fifteen packets in this set along with those in several other sets--seventy-eight packets in all--based on the same V-TECS catalog.) (JT)

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ED155419

MASTERING THE OFFSET MASTER

STUDENT'S MANUAL

Prepared by

Mrs. Jane Snapp

These materials support
Performance Objective 78 of the
V-TECS Secretarial Catalog

State Department of Education
Office of Vocational Education
Office Occupations Education
Columbia, South Carolina 29201

In Cooperation With

Vocational Education Media Center
Clemson University
Clemson, South Carolina 29631

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OE 016 930

INTRODUCTION

"Mastering the Master" is a filmstrip program which has been designed to present the techniques and procedures in preparing direct image paper masters for the offset printer.

An objective is a statement of what should be accomplished in a program. The following items list your objectives for this program on the offset master.

1. You will be able to identify the following items used for producing masters and know the use of each:

   a. offset master
   b. reproducing pencil
   c. nonreproducing pencil
   d. ball point pen - refillable
   e. reproducing pen - nonrefillable
   f. offset erasers
   g. grease pencil (crayons)
   h. typewriter ribbons designed for offset reproduction
   i. carbon paper
   j. drawing fluid
   k. ink and stamp pad
   l. ruler

2. You will be able to identify and explain the purpose of all guide marks as they are drawn on an offset master.

3. Given material to type, you will demonstrate your ability to type a master in perfect form within 20 minutes judged on the following points:

   a. placement
   b. properly corrected errors
   c. proper use of imaging materials
   d. proper care and handling of the master

4. Given a typed master and a cover sheet, you will be able to demonstrate the correct procedure for reinserting a master into a typewriter for corrections.

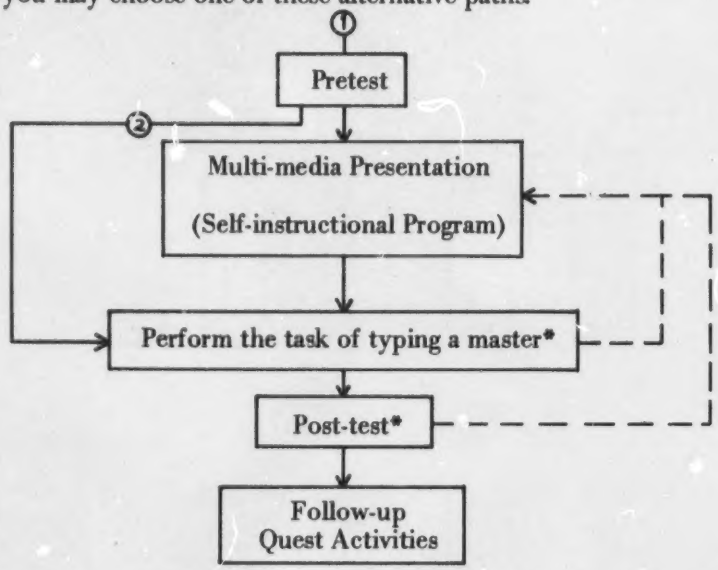
5. Two additional objectives of this program are (a) you will be motivated to demonstrate your ability in typing masters by voluntarily assisting the instructor or office staff in typing masters, and (b) you will be motivated to expand your ability by experimenting with more complicated processes of master reproduction than those covered in this program.

In your *Student's Manual* you will find an audio-response section to be completed during the filmstrip presentation. These sheets are to keep you actively involved in the program and to provide you with a reference source after completion of the program.

Study this Manual thoroughly before attempting the program. Read all directions and ask the instructor for assistance if anything is not clear.

PROCEDURES FOR THE STUDENT

Now that you are familiar with the purpose and objectives of this program and have located the required materials, you may choose one of these alternative paths.



*Dotted lines indicate remedial loop to go back for additional review if you encounter difficulty.

Name _____

MASTERING THE MASTER

P R E T E S T

Directions: Fold this sheet lengthwise at the fold line
Respond to the items by writing your answer in the blank under the Answer column.
When you have finished, check your answers by folding out the Correct Answer column.

Questions	Your Answer	Fold Here	Correct Answer
1. Have you had previous experience typing masters for the spirit duplicator?	1. Yes – No		
2. Can you type on an electric typewriter?	2. Yes – No		
3. Do you know how to clean the element on a selectric typewriter?	3. Yes – No		
4. Can you identify these parts of an electric typewriter: paper guide, paper release, element, paper bail rollers, platen, touch selector?	4. Yes – No		
5. Do you know how to make erasures properly?	5. Yes – No		
6. Are you interested in learning to type offset masters?	6. Yes – No		
7. Are you currently enrolled in an office procedures course?	7. Yes – No		
If you have answered yes to each of these questions, continue with the pretest. If you answered no to any questions, see your instructor for clarification.			
8. Typing, writing or drawing on an offset master what is to be duplicated is known as_____.	8. _____		imaging
9. _____are printed on masters in nonreproducing ink to help you quickly position copy on the master.	9. _____		guide lines
10. Masters are run on an _____.	10._____		offset machine or printer
11-17. Materials for this section are on the display table. Identify items numbered:	11._____		offset master
(1)	12._____		reproducing pencil
(2)	13._____		carbon paper
(3)	14._____		nonreproducing pencil
(4)	15._____		ball point pen
(6)	16._____		offset eraser
(11)	17._____		ruler
(12)			

18. Offset duplication is based on the principle that ____ and ____ do not mix.	18. ____ ____	grease and water
19. A ____ surface is used for printing on an offset.	19. ____	flat
20. The image drawn on an offset master is highly receptive to ____.	20. ____	ink
21. The non-imaged area of a master repels ____ when moistened.	21. ____	ink
22. The non-imaged area of a master is receptive to ____.	22. ____	water
23. How long should a master "set" before it is run?	23. ____	30 minutes
24. What is used to reinsert a master into the typewriter to prevent smudging?	24. ____	cover sheet
25. The last thing you should do before removing a master from the typewriter is to ____ it.	25. ____	proofread

Fold Here

STUDENT INVOLVEMENT LEARNING ACTIVITY SHEET

Learning Activity No. I: To be completed after frame No. 13.

1. The term i_____ refers to typing, writing, or drawing on an offset master what you wish t have duplicated.

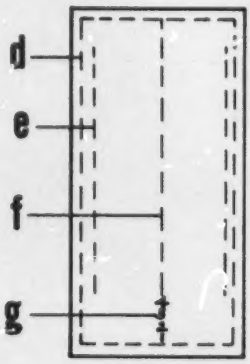
2. Masters are run on an o_____ m_____.

3. An important question to ask yourself before choosing a master for a particular job is h___ m _____ c_____ are needed?

4. G_____ l_____ are printed on masters to help you quickly position your copy on the master.

Match the following guide line descriptions with the proper names:

4—a. _____ top edge paper guide
4—b. _____ typewriter line scales
4—c. _____ pica/elite typing scales
4—d._____ series of dashed lines running length of master
4—e. _____
4—f. _____
4—g. _____



1. Scale for positioning material laterally across the page.
2. Series of dashed lines indicating typing limits.
3. Warning lines for number of lines left on paper.
4. Numbers that indicate line spaces, 6 lines to an inch.
5. Dashed lines indicating width of paper, 8½ inches wide.
6. Where top edge of copy paper will be positioned in relation to the master.
7. Lines showing center of copy.

Learning Activity No. II: To be completed after frame No. 19.

5. Offset duplication is based on the fact that w_____ and o _____ do not mix.

6. Printing on the offset is done on a f_____ surface.

7. The image on an offset master is highly receptive to i_____.

8. The non-image area of a master is receptive to w_____ and repels i_____ when moistened.

Learning Activity No. III: To be completed after frame No. 31.

9. Oils can be accidentally deposited on a master during production from several sources. List two of these sources:

   a. _____ b. _____

10. The surface of the master has a special coating which can be damaged easily through the processes of handling and typing.

    Check the items listed below which are true statements:

    ____ (1) You should never fold a master to insert it into a typewriter.
    ____ (2) "Touch control" should be set on the typewriter at a strength that causes embossing of the master.
    ____ (3) Paper bail rollers should be placed outside the image area of the master to prevent oil from the rollers getting on the master.
    ____ (4) Hand lotion applied before working with a master prevents fingerprints on the master.
    ____ (5) If you must fold a master to insert it into a typewriter, the fold should be at a point outside the image area.
    ____ (6) Typewriter keys clogged with ink should be cleaned before a master is typed.

Learning Activity No. IV: To be completed after Slide No. 50.

11.
(1) _____ (7) _____
(2) _____ (8) _____
(3) _____ (9) _____
(4) _____ (10) _____
(5) _____ (11) _____
(6) _____

Learning Activity No. V: To be completed after frame No. 57.

12. Always remember to p_____ everything you have typed before removing it from the typewriter.

13. A p_____ action is used to erase errors on a master to protect the special coating.

14. Ink deposits on the eraser are removed by r_____ the eraser on a clean sheet of paper after each erasure.

15. A cover sheet must be used when r_____ a master into the typewriter.

16. Allowing a master to "set" for about _____ minutes will increase the number of copies that can be run from the master.

Name _____

Evaluation _____

MASTERING THE MASTER

POST – TEST

Directions: Respond to the items by writing your answer in the blank under the Answer Column. When you have finished, turn in this sheet to your instructor for evaluation.

Questions	Your Answer	Acceptable ✓	Not Acceptable ✗
1. Typing, writing, or drawing on an offset master is called _____.	1. _____	+5	-5
2. You will run a typed master on a(n) _____.	2. _____	+5	-5
3. The _____ on a master help you to quickly position your copy on the master.	3. _____	+5	-5
4. Fill in the blanks:	4.		
a. The typewriter _____ on a master indicate the line spaces on the master that correspond to those on the copy paper.	a. _____	+5	-5
b. A series of dashed lines that run down the center of a master indicate the _____ point of the copy.	b. _____	+5	-5
c. The _____ paper guide is used for positioning material laterally across the page.	c. _____	+5	-5
5. Offset duplication is based on the fact that _____ and _____ do not mix.	5. _____ _____	+5	-5
6. Printing on the offset is done on a _____ surface.	6. _____	+5	-5
7. It is important to remember to _____ the typewriter keys or element before beginning to type a master.	7. _____	+5	-5
8. _____ occurs when the typewriter keys hit the master too hard.	8. _____	+5	-5
9. The last step before removing a master from the typewriter is to _____ it.	9. _____	+5	-5
10. A _____ must be used when reinserting a typed master into the typewriter.	10. _____	+5	-5
11. A _____ action is used to erase errors on a master to protect the special coating.	11. _____	+5	-5
12. The _____ are a source of oil from which the master must be protected.	12. _____	+5	-5

		✓	✗
13. Identify the following items on the display table by writing the number of the items that correspond to the names listed below:	13.		
a. reproducing pencil	a. _____	+5	-5
b. offset eraser	b. _____	+5	-5
c. nonreproducing pencil	c. _____	+5	-5
d. offset master	d. _____	+5	-5
e. ballpoint pen non-refillable	e. _____	+5	-5
f. carbon paper	f. _____	+5	-5
g. ruler	g. _____	+5	-5
14. _____ _____ _____ should be placed outside the image area of the master to prevent oil from the rollers getting onto the master.	14. _____ _____ _____	+5	-5

AFTER THE TEST:

If you did not score 100% on this test, return to the program for another review.

If you did score 100% on this test, submit the page to your instructor.

CHECKOUT ACTIVITY NO. 1

Typing an Offset Master

Collecting any materials you need from the available supplies, type a master using the items on page 8 in the *Student's Manual.*

Title the paper: QUEST ACTIVITIES

Center the material for a regular sheet of copy paper using a 50-space line.

Draw squares using a nonreproducing pencil to the left of each number. Then go over them with a reproducing pencil or pen. The first sentence is given in the example below.

Example:

☐ 1. Make yourself available for typing jobs needed in the school office during your free period.

When you have completed this project, keep the master for duplication after you have learned how to use the offset duplicator.

CHECKOUT ACTIVITY NO. 2

Turn to Appendix B, "Cleaning the Offset Printer," and prepare to type this information. Type the title and subtitle in correct manuscript form. Single space sentences and double space between each numbered item. Draw squares to the left of the numbers using a nonreproducing pencil and retrace them with a reproducing pen or pencil.

Center the body on a regular sheet of copy paper using a 60-space line. It should take you no longer than 20 minutes to complete this activity. Contact the instructor before you start this activity for a time check.

Name _____

Instructor's Evaluation Guide
for

MASTERING THE MASTER
CHECKOUT ACTIVITY NO. 1

PERFORMANCE CRITIQUE:

Excellent . . . . . .___
Good . . . . . .___
Fair . . . . . .___
Needs Improvement . . .___

ACTIVITY Type and correct offset masters.	Evaluation	
	Acceptable	Unacceptable
1. Used specified format.		
2. Made necessary typewriter adjustments.		
3. Typed within limitation lines.		
4. Corrected all errors properly.		
5. Had no smudges or fingerprints on final copy.		

Name _____

Instructor's Evaluation Guide
for
MASTERING THE MASTER
CHECKOUT ACTIVITY NO. 2

PERFORMANCE CRITIQUE:

Excellent . . . . . ___
Good . . . . . ___
Fair . . . . . ___
Needs Improvement . . . ___

ACTIVITY Type and correct offset masters.	Evaluation	
	Acceptable	Unacceptable
1. Used specified format.		
2. Made necessary typewriter adjustments.		
3. Typed within limitation lines.		
4. Corrected all errors properly.		
5. Had no smudges or fingerprints on final copy.		

QUEST ACTIVITIES

If you have enjoyed this program on preparing masters, you are encouraged to pursue the activities which have been listed on this page as an extension of the learning package. These activities will demonstrate your enthusiasm for this skill and will expand your knowledge and ability in typing offset masters.

1. Make yourself available for typing jobs needed in the school office during your free period.
2. Agree to do jobs within the office occupations department that require the production of an offset master.
3. Provide any assistance you can when other students are experiencing difficulty during their study in the program or during their production of Quest Activities.
4. Check books related to the offset printer for further study on the offset process.
5. Continue to expand your interest in related activities such as: Offset duplication, making metal masters, and production techniques by working for the school newspaper or annual staffs. These are areas in which you will be able to "show off" your new skills.
6. Just for fun--and compliments--create stationery for yourself to be reproduced on the offset printer. Just think how impressing it would be to send *originals* that you made yourself and no one else will have.
7. For extra credit in your course, create a Christmas card for your instructor by drawing with a carbon-base ink or in pencil.
8. Using Typewriter Art, create a "masterpiece" on an offset master.

APPENDIX A

Preserving a Paper Master For Reuse

1. After the last copy has been run, move the form roller control lever to neutral. In this position, the ink rollers will not transfer ink to the master.

2. Using scrap paper, run several sheets through the printer until the print becomes light showing that the ink has been removed from the surface of the master.

3. Stop the machine.

4. Secure the bottle marked Gum. Apply this fluid to the master using a cotton pad.

5. Once the master is completely covered with gum, remove the master from the cylinder and let it dry.

6. File.

APPENDIX B

Cleaning the Offset Printer

1. Remove fountain solution from the fountain solution trough.
2. Remove and clean fountain solution trough using blanket wash and a rag.
3. Remove ink from tray with cards and ink knife.
4. Remove ink roller.
5. Put new cleanup mat on cylinder.
6. Saturate rollers with blanket wash while machine is on slow speed and aquamatic control is on high. (Do not have water in the fountain.)
7. Move ink control lever to ink and ink will appear on mat.
8. Put on clean mat and saturate rollers again.
9. Repeat steps 3-7 until cleanup mat does not pick up ink.
10. Take off mat.
11. Clean blanket.
12. Clean rollers not touched by blanket wash.
13. Clean master cylinder with etch to make it repel ink.
14. Put in new ink on top of roller – not directly into ink well – if the machine is to be used immediately. If it will stand idle, do not add the ink.
15. Clean the work area and return all materials to their proper storage areas.

APPENDIX C

Platemaker Instructions
A.B. Dick 111 - Offset Platemaker

1. Turn off room lights. Area must be fairly dark so developing materials will not be overexposed.
2. Make sure the tray and fluid bag are in position.
3. Pour in developer fluid.
4. Turn knob on left of machine until it clicks.
5. Get negatives and plates needed.
6. Turn on first button and place dial on red arrow on exposure indicator.
7. Place negative yellow side up.
8. Place original on top, face down and centered on negative.
9. Press second button.
10. Take out the plate and place it dull side up on top of the negative. Roll the pages under the clear plastic until they are attached.
11. Place yellow side of negative down on top of the plastic and remove the original copy.
12. Press third button and then wait 20 seconds. Peel the negative from the master.
13. Apply fixer on the metal plate.
14. Shake lacquer and apply to metal plate.
15. The metal plate is ready to run using the same process you would for a paper master.
16. Use etch to remove the red lacquer from the metal plate before duplicating.
17. Clean the platemaker machine. First release the knob on the left of the machine, then remove the fluid after it has completely emptied into the bag.

APPENDIX D

Preparing Paper Masters on the A.B. Dick Photocopier

1. Remove the regular photocopy paper from the machine.
2. Readjust the paper guide to accomodate the roll of continuous masters.
3. Insert the roll of continuous paper masters.
4. Set the paper cutter at its maximum cutting length--the paper will have to be long enough to attach the master at both ends to the offset printer.
5. Center your original under the cover of the photocopier.
6. Run a copy in the usual manner.
7. When you have run a copy which is of the proper exposure, stop the photocopier.
8. This paper master will not have prepunched holes for attaching to the offset printer. You must use the clamp bar for attaching the top of the master.
9. The bottom of the master will be attached using the same clamp except that it will punch its own holes in the master.
10. Run this paper master as you would any other paper master.

MASTERING THE OFFSET MASTER

INSTRUCTOR'S MANUAL

Prepared by

Mrs. Jane Snapp

These materials support
Performance Objective 78 of the
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PROGRAM DESCRIPTION

This individualized self-instructional program was developed for use in an office procedures course to teach the fundamentals of preparing masters for an offset printer. This program is also adaptable to advanced typing classes. The offset is a relative newcomer to the machines course and should be adapted to the rotation plan along with the rest of the equipment common to this area.

Preparing masters is a preliminary step to duplication on the offset. Therefore, by using this program the office procedures or typing teacher can focus her attention on individualized machine instruction while the preliminary step of master production is being studied independently by the student. After each student completes this program, the next step of duplication on the offset can be supervised by the teacher. Having typed a master during this self-instructional program, there is added incentive and motivation provided the student in having a typed master ready for duplication. There is the realization that after the duplication process has been learned a job has been completed. The learner can see the "results" in actual copy coming from the offset printer.

ENTERING BEHAVIORS

The learner should be able to operate the following equipment before attempting this program on an individual basis:

1. a filmstrip projector
2. cassette tape player
3. typewriter

The learner must know how to type, how to clean the keys (or element) of the typewriter properly, and possess a working knowledge of the operable parts of the typewriter.

TERMINAL OBJECTIVES

The learner will demonstrate the ability to type an offset master in perfect form on the following points within 20 minutes:

1. Placement
2. No typographical errors
3. Proper use of imaging materials
4. Proper care of the master—which can be determined once the master has been run on the offset

Given a typed master and a cover sheet, the learner will demonstrate the proper procedure for reinserting a master into the typewriter to make a correction. The learner will identify the following items and their uses:

1. offset eraser
2. reproducing pencil
3. nonreproducing pencil
4. ballpoint pen-refillable
5. ballpoint pen-nonrefillable
6. grease pencil
7. typewriter ribbon for offset use
8. carbon paper
9. drawing fluid
10. ink and stamp pad
11. ruler with raised edge
12. offset master

Given an offset master, the learner will identify and explain the purpose of all guide marks.

REQUIRED MATERIALS & EQUIPMENT

Following is a list of the minimum required materials and equipment needed for this program.*

1 filmstrip projector
1 cassette tape player
1 typewriter for each student
2 simulated offset masters, or
2 offset masters
1 offset eraser
1 reproducing pencil
1 reproducing pen
1 nonreproducing pencil
1 offset printer (optional)

*All materials and equipment should be made available in the office procedures room during the course of this program.

PROCEDURES FOR THE INSTRUCTOR

Why Use It?

The offset printer has become popular in recent years for general office use because greater quantities can be printed from a single master and the copies are of a higher quality than other duplication processes. By using this instructional program, it is possible for the office machines instructor to fit instruction on the offset into the structure of an office procedures class or into a typewriting class.

This program will be of special interest to learners who wish to become office machines operators and to secretarial majors who should be capable of operating various office machines.

Even if no machine is available, all secretarial students should be instructed in master preparation. In many businesses, workers who prepare the masters do not always have to operate the offset printer. This is especially true in businesses having a central duplicating department.

The accountability of teaching a particular piece of equipment is of major importance to office procedures teachers. Instruction for the offset printer is believed to be accountable because of its complexity of operation and the time required to master techniques of reproduction on the offset.

How to Use It

This program is adaptable to group or individual instruction. In either case, the instructor should be thoroughly familiar with the *Instructor's Manual* and the *Student's Manual* before presenting the program.

GROUP INSTRUCTION

1. Set up projector and cassette player.
2. Prefocus the projector on frame No. 1
3. Have the tape player ready to begin.
4. Distribute the *Student's Manual.*
5. Review the *Student's Manual* with the group.
6. Administer the pretest.
7. Divide the group according to their scores on the pretest.
8. Present the filmstrip program.
9. Have a production lab ready with all necessary materials supplied.
10. Arrange to collect the Learning Activity, the Post-Test, and Program Evaluation form from each person.

INDIVIDUAL INSTRUCTION

For individual use the instructor directs the learner to the materials and equipment needed for the program. The learner should be instructed to study the *Student's Manual* and then proceed as directed in the instructions. The cassette should be prepared for individaul use by having an audible beep tone to indicate to the learner when slides are to be changed. The instructor will have to prepare an exhibit table with numbered items corresponding to those items listed for identification in Student Activity No. IV.

TIME REQUIREMENTS FOR THE PROGRAM*

Activity	Approximate Time
Preparation & Orientation	4 minutes
Pretest	4 minutes
Tape Presentation	25 minutes
Typing Activities	20 minutes
Post-test	5 minutes
Review & Reinforcement	5 minutes
Program Evaluation	5 minutes
TOTAL TIME	68 minutes

*Many office procedure courses are set up on a block or rotating schedule. This program is adaptable to either type of schedule and can be presented in one extended period or divided into two or more units.

INSTRUCTOR'S ANSWER SHEET
for post-test
Mastering the Master

1. imaging

2. offset machine

3. guide lines

4. a. line scales
   b. center
   c. top edge

5. oil, water

6. flat

7. clean

8. embossing

9. proofread

10. cover sheet

11. picking

12. acceptable answers: Hands, paper bail rollers, platen, or feed rollers

13. a. 2
    b. 11
    c. 4
    d. 1
    e. 6
    f. 3
    g. 12

14. paper bail rollers

FOLLOW–UP ACTIVITIES

The instructor should check to assure that all exercises were understood and executed properly.

Anyone experiencing difficulty during production of masters should be given individual attention.

Masters produced during this program are to be kept and used during the program on offset operation. This should be explained clearly so that no one will destroy the typed master.

Students are to be encouraged to pursue quest activities and be rewarded for additional practice.

****REFERENCES****

A.B. Dick Operating Instructions, "Models 324 and 326 Offset Duplicators." (A. B. Dick Company, Chicago, Illinois), 1971.

David, Richard E., Roland G. Hughes, and Richard T. Williams. *Operating the Dry Mount Press.* (NDEA Institute for Advanced Study in Educational Media, Arizona State University.) 1968, revised edition-1971.

Offset Supplies Selector. (A. B. Dick Company, Chicago, Illinois) Form 64-01.

Techniques of Offset. (A. B. Dick Company, Chicago, Illinois) 1964.

The instructor may wish to refer to the following reference books for special reading assignments related to preparing masters for the offset printer and for extra problems in this area:

Meehan, James R., Mary Ellen Oliverio, and William R. Pasewark. *Secretarial Office Procedures* 8th ed., South-Western Publishing Co., 1972. (Chapter 10 - "Copying and Duplicating").

Meehan, James R., Mary Ellen Oliverio, and William R. Pasewark. *Clerical Office Procedures* 5th ed. South-Western Publishing Co., 1973. (Chapter 10 - "Copying and Duplicating" with Part 4 "Offset Duplicating").

Fires, Albert C., et al. *Applied Secretarial Procedures* 7th ed. McGraw-Hill Book Company, 1974. (Chapter 13 - "Preparing Multiple Copies").

Pasewark, William R. *Duplicating Machine Processes.* 2nd ed. South-Western Publishing Co., 1975.

NARRATION

Mastering the Master

1. Title

2. Credits

3. This is an offset master. It is a special sheet of paper with holes punched at the top and bottom so it can be attached to an offset printer. A paper master has special coatings to make its surface receptive to the process of imaging.

4. The term imaging refers to typing, writing, or drawing on an offset master material you wish to duplicate. Direct imaging is simply typing, writing, or drawing directly on the master for reproduction.

5. You can type, write, or draw on a direct image offset master and produce printed copies when run on an offset press or printer, such as the one shown here.

6. To get the best printed results from your master, you should decide how many copies are needed; then choose the type of master that best suits your particular needs.

7. The number of copies that can be run from one master varies with the quality of the master chosen. Some brands of masters may be color-coded according to the number of copies you need. On economy runs where less than 100 copies are needed, the least expensive and least durable master is adequate. A similar low-cost master may be used for short runs of up to 200 copies. Possibly the most popular master is a general-use medium-run master which runs up to 500 copies and may be filed and used for reruns. Other masters are available for very long runs. These are the most durable masters and can produce several thousand copies and be filed and rerun several times. Remember that selecting the right master for the job depends on choosing the right quality master for the number of copies needed. Check the supplies catalog that came with your offset printer to determine which master would be most suitable for the uses of your department.

8. Using the offset master you choose for the job also involves knowing how to use the guide marks on a master. You can purchase masters printed with guide lines to help you quickly position your copy on the master. The guide lines are printed with a nonreproducing ink so they will not show on the finished printed copy.

9. A guide line for the top edge of the paper is positioned about ½ inch down from the top edge of the master.

10. Typewriter line spaces are indicated at the side margins--six lines to an inch. If you start typing at line number one, you will automatically have 1½ inch top margin if the vertical adjustment on your offset printer is set at "0" during the run.

11. A scale across the top and bottom of the master helps you position your copy horizontally across the page. The scales are marked for both pica (10 characters to the inch) and elite (12 characters to the inch) typewriter faces.

12. A series of dashed lines running the length of the master indicate (a) the width of an 8½ inch sheet of paper, (b) typing limits to allow ½ inch side margins, and (c) a center line to aid in positioning copy. This center line contains warning numerals (d) to show you how many lines can be typed before you reach the bottom of the sheet of paper you are using. Line endings are generally shown for 5½-inch, 10½-inch, 11-inch, and 13-inch paper.

13. You have just listened to some pointers on using the offset master. Let's see if you remember the important facts presented so far.

    Turn in your *Student's Manual* to Activity No. 1. Answer the questions and then restart the tape and projector for the correct answers. Stop the tape player and projector until you have completed Activity No. 1.

14. Your answers should be:
    1. The term imaging refers to typing, writing, or drawing on an offset master what you wish to duplicate.
    2. Masters are run on an offset printer or machine.
    3. An important question to ask yourself before choosing a master for the particular job is how many copies are needed?
    4. Guide lines are printed on masters to help you quickly position your copy.

15. 4-a. Top edge paper guide--No. 6 (where the top edge of the paper will be positioned in relation to the master.)
    b. Typewriter line scales--No. 4 (numbers that indicate line spaces, 6 lines to an inch.)
    c. Pica/Elite typing scales--No. 1 (scale for positioning material laterally across the page.)
    d. Series of dashed lines running the length of the master--No. 5 (dashed lines indicating width of paper 8½ inches wide.)
    e. The arrow for "e" is pointing to No. 2 (a series of dashed lines indicating typing limits.)
    f. The "f" arrow is pointing to No. 7 (lines showing the center of the copy.)
    g. The "g" arrow is pointing to No. 3 (the warning lines for the number of lines left on the paper.)

    If you answered all of these items correctly, you are doing very well.

16. Some background information is necessary for you to understand how the offset process works to transfer the image of the master onto the copy paper.

17. Offset printing is based on the simple principle that water and grease do not mix and on the principle of printing from a "flat" surface in that it does not use raised areas or depressed areas to transfer ink. It is simply a flat sheet of paper.

18. The typed or written image on an offset master picks up ink. This ink then transfers to the copy paper.

19. The non-imaged area picks up water. This water, which is mixed with fountain solution, prevents ink from adhering to the non-imaged area of the master.

    At this point in the program we will quickly check to see that you can recall the principles of offset duplication, because application of these facts will determine how well you can prepare top quality masters. Turn to Learning Activity No. II in the *Student's Manual.* Return to the program as soon as you complete this section. Turn off the projector and tape recorder.

20. Check your answers:
    5. Offset duplication is based on the fact that water and oil, or grease, do not mix.
    6. Printing on the offset is on a flat surface.
    7. The image on an offset master is highly receptive to ink.
    8. The non-imaged area of a master is receptive to water and repels ink when moistened.

21. Now that you are familiar with the characteristics of a master and the principles of offset duplication, you are ready to learn the process of preparing a master for duplication on the offset printer.

22. The first step in preparing a master for duplication is to check your typewriter. The quality of the typing and the condition of the typewriter directly determine the quality of the copies you will print.

23. As you recall, the offset process is based on the principle that oil and water do not mix. Therefore, you will have to be sure that the platen, feed rollers, and paper bail rollers of the typewriter are clean and free of oil.

24. Also, the typewriter keys should be clean to prevent filled in characters. Since any deposit of ink on the master will result in ink on the copies, dirty type will reproduce as shown here. Would you want to be responsible for distributing 500 copies of material having this appearance?

25. Next, care of the master during production is critical. Our skin produces natural oils which react the same as any other type of oil on the offset master—they reproduce beautifully.

26. To prevent running several hundred copies of fingerprints, handle the master only on the outer edges beyond the imaged area. It is a good idea to wash your hands before using masters so that any hand lotions or natural oils are removed.

27. Handling masters poses a special problem when writing or drawing, because you need a place to rest your hand. This problem is solved by placing a clean sheet of paper under your hand to protect the master.

28. The paper bail rollers are another source of oil from which the master must be protected. Be sure that these rollers are placed outside the imaged area as you see here. Remember, there are guide lines drawn on the master outlining the image area.

29. Avoid folding, creasing, or cracking the master. Any of these abuses, which can damage the master's surface, will be evident on the final copy showing up as lines that cannot be erased. Some machines are equipped with an extra long carriage allowing lengthwise insertion of the master for any typing problems requiring 11 inch by 8½ inch or 14 inch by 8½ inch paper. However, if a typewriter with a long carriage isn't available, just remember to fold the master beyond the image area to be reproduced and any ink marks appearing on the master will not be duplicated on the final copy.

30. Touch control is an important element in typing offset masters. Use a uniform touch which is heavy enough to deposit a clear, unbroken image, but light enough to prevent embossing. When the keys are hit too hard, as shown in Example No. 1, embossing occurs. On electric typewriters, the touch control is automatic and must be set using the touch control selector. When embossing occurs, the letters have been recessed into the master so that the ink deposits don't form on the master in order to transfer satisfactorily to the copy. (Remember the principle of "flat" printing?) The second example shows the results of a master typed using the proper touch setting.

31. One way to check for embossing is to run your hand across the back of the master. If you can feel the print on the back, the touch setting is too heavy. If the back is still smooth, the setting is right.

Let's review some of the important facts in preparing an offset master. Turn in your *Student's Manual* to Learning Activity No. III and answer the questions as directed. Turn off the tape player and projector and return after you have completed this activity.

32. Check your answers to Learning Activity No. III:
The answer to No. 9 can be two of the following -
-hands or fingers
-the paper bail rollers on a typewriter
-the feed rollers
-or the platen
These are all sources of oil.

33. In No. 10 you were to check the items that are true statements concerning the protection of the master's special coating.

No. 1 - should not be checked because a master can be folded if it is outside the imaged area of the material being duplicated.

No. 2 - is not true because you never want a master to be embossed-- if it is, the touch control is on a setting that is too heavy.

No. 3 - is a true statement: Paper bail rollers should be placed outside the image on the master to prevent oil from the rollers getting onto the master.

No. 4. - is not checked because hand lotion is an oily substance which should be removed from the hands before working with offset masters.

No. 5 - is true: If you must fold a master to insert it into a typewriter, the fold should be at a point outside the imaged area.

No. 6 - is a true statement also: Typewriter keys clogged with ink should be cleaned before a master is typed.

If you answered these questions correctly, you are progressing very well in the program.

34. At times you may wish to use special devices to draw extra attention to your message or you may wish to duplicate handwriting, an illustration, a table, or a business form. There are several writing and drawing materials available to you for these purposes. All materials are prepared with suitable substances making duplication on the offset printer possible.

35. Special offset typewriter ribbons are made for use in imaging direct image paper masters for an offset printer. They contain a greasy substance which reproduces via the offset process. These ribbons may be purchased in six or more different materials: cotton, silk, nylon, carbon, Mylar, and polyethylene.

36. Carbon paper can be used for tracing drawings and also for imaging masters. The master unit is treated as the second sheet in a carbon pack, since the typing is actually done on the top sheet of paper.

37. A reproducing pencil is a lead pencil which can be used to handwrite, rule, draw, or underscore on paper masters. A firm pressure must be used but not enough pressure to cause embossing. The printed copy will have the same pencil-like appearance as the original.

38. Nonreproducing pencils are used to draw guide lines and layout instructions. The lines will wash off the master at the printer and will not reproduce. These guide lines and instructions should be drawn using very light pressure.

39. These ballpoint pens have a special ink to reproduce on an offset machine. They are used for signature, handwriting, drawing, and ruling on all direct image masters. It is best to use a light, even pressure being careful not to emboss. Ballpoint pens come in the refillable type and...

40. in the standard throw-away shell.

41. Hard, grease-type crayons can be obtained for artwork on direct image masters. The copy will have the same appearance as the original crayon copy.

42. Drawing and erasing fluids are used with drawing pens or draftsmen's pens for ruling and lettering. They can be used with artists' brushes. The drawing fluid produces heavy lettering and can be used effectively for solid areas. Drawing fluid must be allowed to dry thoroughly on the master before it is run on the printer.

43. Two types of greaseless erasers may be used on the offset master. This is a regular block-type artist's eraser used for masters with artwork.

44. This is a pencil-type eraser most commonly used for making erasures on typed masters.

45. Stamp pad and ink are used with rubber stamps where a stamped image is needed on the copies. They can be used to stamp signatures on bulletins, letters, and order forms.

46. When writing with pencils and ball point pens, best results are obtained by placing the master on a hard, smooth surface, which will minimize the chance of embossing. If you are going to image the master with more than one of the available materials, first draw guide lines with your nonreproducing pencil. Second, type in the body copy. Use ballpoint pen, pencil, crayon, and carbon paper last. Be sure to use the drawing fluid as a final step. The fluid requires at least 15 to 30 minutes to dry so it will not smear.

47. When drawing a ruled form on a master, it's a good practice to mark guide lines with a nonreproducing pencil first. Then, using your marks as guides, rule in the lines with a ball point pen, pencil, or drawing pen. Use a ruler with raised guide edge to prevent smearing of wet ink.

48. Color can be reproduced on the offset printer by preparing a separate master for each color.

49. The ink is changed in the printer for each master requiring a different color.

50. You have been introduced to a variety of materials used in writing and drawing on direct image masters. A display of offset materials has been prepared and each item is numbered. Using your *Student's Manual,* fill in the blanks for Learning Activity No. IV by writing the names of the materials beside the corresponding numbers on your Activity sheet. Turn off the projector and player and return to the frames after you have completed this activity.

51. Check to see that you have written the correct answer beside the proper number as shown here:
    1. offset master
    2. reproducing pencil
    3. carbon paper
    4. nonreproducing pencil
    5. drawing crayon, or grease pencil
    6. ballpoint pen
    7. ruler with raised guide edge
    8. stamp pad and ink
    9. drawing fluid
    10. typewriter ribbon
    11. greaseless eraser

52. Corrections are another hazard to which masters are subjected. Of course, typographical errors are something you can "control" by typing accurately.

53. But, if the inevitable does happen and you find that an "i" is typed where you know you typed an "e" there's nothing to do but erase. A very good habit to form is that of proofreading everything you have typed before taking it from the typewriter. That way you avoid the problem of realigning the characters—which can be exasperating during a rush job.

54. Now to correct those errors that do occur. Use a special greaseless offset eraser to gently "pick" the carbon deposit off the master. It isn't necessary to remove the stain or "ghost" image left by the dye from the fabric ribbon. This stain will not reproduce. Be very careful not to damage the slick surface of the master or the reproducing quality will be impaired.

55. Keep the eraser clean by rubbing it on a clean paper between errors to remove all ink deposits that can spread and cause smudges.

56. In the event that changes must be made after the master has been removed from the machine, place a sheet of paper over the imaged area of the master when reinserting it into the typewriter. This procedure will protect the image on the master from being smudged or smeared by the typewriter's feed rollers. You will be asked to demonstrate this technique later in the program for your instructor.

57. After typing a master for the offset printer, allow it to set 30 minutes or longer before duplicating. This simple step will lengthen the life of a master.

Turn in your *Student's Manual* to Learning Activity No. V and complete the statements in this section. When you finish, return to the program. Stop the player and projector.

58. Now check your answers with those on the frames.
    12. Always remember to proofread everything you have typed before removing it from the typewriter.
    13. A picking action is used to erase errors on a master to protect the special coating.
    14. Ink deposits on the eraser are removed by rubbing the eraser on a clean sheet of paper after each erasure.
    15. A cover sheet must be used when reinserting a master into the typewriter to protect the image.
    16. Allowing the master to "set" for about 30 minutes will increase the number of copies that can be run from the master.

If you have answered all the questions in this section correctly, you are doing a very good job.

59. After the master has been run, it can be preserved for later use. How long it will last and how many copies it will duplicate depend on the quality of the master. See Appendix A in your *Student's Manual* for instructions on preserving a master for reuse.

60. The offset printer should be cleaned thoroughly at least once a week if used regularly. If a period of time will elapse between uses, the machine should be cleaned after each use. When the ink dries out, it becomes hard and will not transfer to the ink rollers. Check Appendix B for the steps used in cleaning an offset printer.

61. "Mastering the Master" is an instructional unit on preparing masters by writing, typing, or drawing directly on a paper master. This method of duplication is called "direct image." Two other methods of preparing offset masters are explained in Appendix C and Appendix D of your *Student's Manual.*

62. Are you ready to type a master using the proper techniques covered in this program? If there is any doubt in your mind, do not hesitate to review the process once again by returning to any point you question and reviewing any particular section that may have given you trouble.

If you are ready to begin the preparation of a master, stop the tape and projector at this time and turn to the directions given in the *Student's Manual* for Check-Out Activities Nos. I and II. If at any time you need help, ask the instructor for assistance.